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| 09/665,950 | 09/21/2000 | Yoshiyuki Sogawa | 32405W041 | 9479 |

7590 11/09/2005
Smith Gambrell Russell
1850 M Street N W
Suite 800
Washington, DC 20036

EXAMINER

SELBY, GEVELL V

| ART UNIT | PAPER NUMBER |
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2615

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/665,950

Applicant(s)

SOGAWA ET AL.

Examiner

Gevell Selby

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/6/05 has been entered.

Response to Arguments

2. Applicant's arguments, see the amendment, filed 9/6/05, with respect to the rejection(s) of claim(s) 1-3 and 7 under 35 U.S.C. 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Takano et al, US 5,50,254.

3. Applicant's arguments filed 9/6/05 have been fully considered but they are not persuasive, in regard to claims 4-6, 8-10, 32, and 33. The applicant submits the prior art does not disclose a structure for judging whether or not the camera position is within the finely adjustable range. The examiner respectfully disagrees.

Re 1) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a structure for judging whether or not the camera position is within the finely adjustable range) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

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limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Judging on compliance or non-compliance of the shooting direction of said camera apparatus based on a relationship between the position of said reference pattern determined and a proper range defining a finely adjustable range which is adjusted by an image transformation for the shooting direction of said camera apparatus is inherently performed by the examiner in the Masaaki reference when he/she compares the positions of the reference pattern and the judgment pattern (see figure 7) on the display (58), wherein fine adjustment is made by the transformation of translating the image to the correct location (see Para. 42-47).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 4, 8, 32, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsushita, JP 08-276787.**

In regard to claim 4, Matsushita, JP 08-276787, discloses a test method for examining a shooting direction of a camera apparatus attached to a body of a vehicle is within finely adjustable range which is adjusted by an image transformation (see Para. 42-48) comprising:

obtaining a photographed image by photographing with said camera apparatus a test chart placed at a predefined position ahead of the vehicle with a reference pattern drawn on the test chart (see figures 4-6 and Para. 35-38);

determining a position of said reference pattern on said photographed image (see Para. 41); and

judging on compliance or non-compliance of the shooting direction of said camera apparatus based on a relationship between the position of said reference pattern determined and a proper range defining a finely adjustable range which is adjusted by an image transformation for the shooting direction of said camera apparatus (This step is inherently performed by the examiner in the Masaaki reference when he/she compares the positions of the reference pattern and the judgment pattern) wherein fine adjustment is made by the transformation of translating the image to the correct location (see Para. 42-47).

In regard to claim 8, Matsushita, JP 08-276787, discloses the test method for examining shooting direction of the camera apparatus according to claim 4, comprising:

notifying an examiner of information concerning adjustment of the mounting of said camera apparatus according to the amount of deviation of said reference pattern when said reference pattern deviates from said proper range (see Para. 22: The display means 58 displays the processing result to the examiner).

In regard to claim 32, Matsushita, JP 08-276787, discloses a test method for examining a shooting direction of a camera apparatus to judge whether or not the camera apparatus can be positioned within a finely adjustable range wherein fine adjustable range

which is adjusted by an image transformation with respect to the deviation of a camera position, comprising:

obtaining a photographed image by photographing with said camera apparatus a test chart placed at a predefined position ahead of said camera apparatus with a reference pattern drawn on the test chart (see figure 4-6);

setting a judgment pattern at a specific position on said photographed image (see figure 9a, element 62);

displaying said photographed image with said judgment pattern on a display device (see figures 7 and 9a and paragraph 57: the images are displayed on display device 58); and

examining compliance or non-compliance of the shooting direction of said camera apparatus by comparing a position of said reference pattern and a position of said judgment pattern on said displayed photographed image (This step is inherently performed by the examiner in the Masaaki reference when he/she compares the positions of the reference pattern and the judgment pattern).

In regard to claim 33, Matsushita, JP 08-276787, discloses the test method for examining the shooting direction of the onboard camera apparatus according to claim 1, wherein said judgment pattern having at least one judgment reference line extending in a horizontal direction and at least one judgment reference line extending in a vertical direction is set on said photographed image in said setting step (see figure 9, element 62).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsushita, JP 08-276787, in view of Takano et al., US 5,850,254.**

In regard to claim 1, Matsushita, JP 08-276787, discloses a test method for examining a shooting direction of a camera apparatus by comparing a position of a reference pattern (54a) and a position of judgment pattern (62) on a displayed photographed image by an examiner (see figure 16A and B and Para. 7 and 57) so as to judge if said shooting direction is within a finely adjustable range which can be adjusted by an image transformation (see Para. 42-48), comprising:

photographing with said camera apparatus a test chart placed at a predefined position ahead of said camera apparatus with a reference pattern drawn on the test chart, the photographing producing a photographed image (see paragraph 40);

setting a judgment pattern at a specific position on said photographed image (see paragraph 42);

displaying said photographed image with said judgment pattern on a display device (see paragraph 22 and figure 16: The display means (58) outputs all the images from processed by the processor); and

comparing a position of said reference pattern and a position of said judgment pattern on said displayed photographed image (see paragraph 42);

it is implied the examiner judges whether said judgment pattern is within a finely adjustable range (see figure 7: the examiner can judge that the shooting direction is outside the range of the judgment pattern according the shift in x and y) which is adjusted by an image transformation (The image processing means adjusts or moves the range (see Para. 47) wherein fine adjustment is made by the transformation of translating the image to the correct location (see Para. 42-47)).

The Matsushita reference does not disclose the method for examining the shooting direction of a camera when the deviation of the images can be measured to correct the displacement using an image transformation. However, the reference does not disclose mechanically adjusting a position of the camera if the judgment pattern is judged to not be within an adjustable range wherein the image can be adjusted by an image transformation.

Takano et al., US 5,850,254, discloses a method for examining the shooting direction of a camera wherein when a deviation is detected, it is decided in the image sensor direction control unit whether the deviation quantity is correctable or not and when a correction is possible, it is computed to what extent and what angle the image should be moved, and the universal joint of the camera is driven to the correct location.

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Matsushita, JP 08-276787, in view of Takano et al., US 5,850,254, to mechanically adjust a position of the camera if indicated by the

judging, in order that the camera may be more accurate by performing both coarse and fine adjustments when the camera position has deviated from the correct shooting direction.

In regard to claim 2, Matsushita, JP 08-276787, in view of Takano et al., US 5,850,254, discloses the test method for examining the shooting direction of the onboard camera apparatus according to claim 1. The Matsushita reference discloses wherein said judgment pattern having at least one judgment reference line extending in a horizontal direction and at least one judgment reference line extending in a vertical direction is set on said photographed image in said setting step (see figure 9, element 62).

In regard to claim 3, Matsushita, JP 08-276787 in view of Takano et al., US 5,850,254, discloses the test method for examining the shooting direction of the camera apparatus according to claim 1. The Matsushita reference discloses wherein said photographed image is displayed on a navigation display provided in a navigation device in said displaying step (see figure 1, element 58 and paragraph 22).

In regard to claim 7, Matsushita, JP 08-276787 in view of Takano et al., US 5,850,254, discloses the test method for examining the shooting direction of the camera apparatus according to claim 1. The Matsushita reference discloses wherein said reference pattern is at least one of a crisscross pattern and a rectangular pattern. (See figure 6, element 10 and paragraph 41).

8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsushita, JP 08-276787, as applied to claim 4, in view of Tomitaka, US 5,355, 163.

In regard to claim 5, Matsushita, JP 08-276787, discloses the test method for examining the shooting direction of the onboard camera apparatus according to claim 4.

The Masaaki reference lacks wherein said determining step includes:

evaluating a correlation of each of specific regions in said photographed image with a previously prepared specific brightness characteristics pattern; and
specifying a position of one of said regions having the greatest correlation as the position of said reference pattern; wherein said brightness characteristics pattern has the same brightness characteristics as said reference pattern shown on said photographed image.

Tomitaka, US 5,355, 163, discloses a test method for a video camera system wherein said determining step includes:

evaluating a correlation of each of specific regions in said photographed image with a previously prepared specific brightness characteristics pattern (see column 2, lines 35-46); and
specifying a position of one of said regions having the greatest correlation as the position of said reference pattern; wherein said brightness characteristics pattern has the same brightness characteristics as said reference pattern shown on said photographed image (see column 2, lines 47-58).

It would have been obvious to a person skilled in the art, at the time of invention, to modify Matsushita, JP 08-276787, in view of Tomitaka, US 5,355, 163, to have the determining step of claim 5, in order to stably and effectively pickup a quantity of features of the object in the visual field (see column 2, lines 17-19) and determine the

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section of the image with the highest similarity to reference (see column 2, lines 50-52) as taught by Tomitaka.

In regard to claim 6, Matsushita, JP 08-276787, in view of Tomitaka, US 5,355, 163, as described in regard to claim 5 above, discloses the test method for examining the shooting direction of the onboard camera apparatus according to claim 5, wherein said determining step includes evaluating the correlation with said brightness characteristics pattern by searching through a specific search range (see Tomitaka: figure 7, elements FMX1 to FMX3 and column 2, lines 33-35) within said photographed image (PIC), wherein a setting position of said search range is determined based on the position of said reference pattern shown on said photographed image under conditions where said camera apparatus is properly mounted (see Tomitaka: column 6, lines 35-57), and an area of said search range is set in consideration of a deviation of the shooting direction of said camera apparatus (see Tomitaka: column 3, lines 20-29).

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsushita, JP 08-276787, in view of Hamaguri, US 6,462,777.

In regard to claim 10, Matsushita, JP 08-276787, discloses the test method for examining the shooting direction of the onboard camera apparatus according to claim 1.

The Masaaki reference does not disclose a stereo camera.

Hamaguri US 6,462,777, discloses a display testing apparatus wherein said camera apparatus is a stereo camera apparatus having a pair of cameras, and said photographed image is an image photographed by one of said cameras (see column 5, lines 59-61).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Matsushita, JP 08-276787, in view of Hamaguri, US 6,462,777, to have a stereo camera apparatus as in claim 10 in order to enable calibration at a high speed using the convergence of the pair of cameras.

Allowable Subject Matter

10. Claim 9 is allowed.
11. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose selecting a mounting member having a shape for minimizing the amount of deviation of said reference pattern from a plurality of previously prepared mounting members having different shapes and notifying the examiner of the selected mounting member as claimed in claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gvs



DAVID L. OMETZ
SUPERVISORY PATENT
EXAMINER